

MID ONLY

~~U/R~~

Work Order ID 75952

75952

Item ID: D3391-023 Accept *N900040100* Setup Start *NS1*
Revision ID: Stop *NS2*
Item Name: Mid Tube Assembly
Start Date: 02/11/2011 Start Qty: 1.00 *1* Cust Item ID:
Required Date: 16/11/2011 Req'd Qty: 1.00 *1* Customer:
Reference:

Approvals: Process Plan: M-L-J Date: 11/11/02 Tooling: Date:
QC: Date: SPC (Y/N): Date:
Run Start *NR1*
Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr								
D3391	Rev H U/R 11.11.07								
100	Skidtubes	0.00							
100									
Skidtubes	Memo	0.00							
Skidtubes	1-Cut tube to finish length as per Dwg D3391								
	2-Identify as D3391-023								
	3-Drill pilot holes using DT8796 (Do not drill "B" holes) and drill only 1 fwd saddle hole on one side only as per Dwg D3391								
	4-Open saddles and GHW holes to Ø0.375" except for fwd saddle hole of detail "J"								
	5-Remove .030" from Fwd indexing Ridge as per Dwg D3391								
	6-Remove indexing ridge on Fwd & Aft end of skidtube as per Dwg D3391								
	7-Deburr								
	8-Drill #30 pilot holes using wearplate Jig DT8217 Identify Ø0.250" holes with paint marker,								
	9-Open wearplate holes of D3391-023 assembly detail section G-G to Ø0.250" (14 holes) as per Dwg D3391 and 2 holes in section Detail "J", do not open wearplate holes of section "J"								
	10-Open wearplate holes of D3391-023 assembly detail section H-H to Ø0.297" (20 holes) as per Dwg D3391								

DP 11-11-7

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
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NOTE: Date & initial all entries

Work Order ID 75952

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 Required Date: 16/11/2011 Req'd Qty: 1.00 ***1*** Customer:

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Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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11-Open .375" holes to .438" ***do not open fwd saddle holes***

12-Locate D3391-021 in D3391-023 at 9.00" (see view z-z)

13- Transfer drill one fwd saddle hole only to .188" dia. transfer drill all remaining fwd saddle holes using DT 8149 locating from previously drill .188" dia hole, using t-pins and clicos to ensure perfect alignment, open up previously tranfer drilled pilot holes in D3391-023/-021 to 0.438" dia. in D3391-021

14- Transfer drill 2 wearplate holes into D3391-021 using DT8217, locating from two previously drilled holes, drill remaining wearplate holes into D3391-021.

15- Locating from two fwd wearplate holes drillol remaining 6 wearplate holes in D3391-021 using DT8937

16- Open 2 fwd wearplate holes in D3391-023 to .250" dia.

17- counterbore two aft wearplate holes in D3391-021 as per dwg

18- Open 12 wearplate holes in D3391-021 to 0.297" dia.

19-Deburr and blow out all chips from inside tube

open hole Detail J as per dwg D3391
sheet 2 + 6.

N/A

DP 11-11-7

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Work Order ID 75952

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Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
110 *110* QC Quality Control	QC5- Inspect part completeness to step on W/O Memo	0.00 0.00	S 11/11/08						
120 *120* HandFinish Hand Finishing	Chemical Conversion Coat per QSI005 4.1 Memo	0.00 0.00	DC 11/11/08						
130 *130* QC Quality Control	QC3- Inspect Part Finish Memo	0.00 0.00	DP 11-11-8						

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Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
140		0.00							
140	Skidtubes								
Skidtubes	Memo	0.00							
Skidtubes	1-Open float bag holes as per dwg 2-C'sink float bag holes as per dwg 3- Prepare tube for welding 4-Bond web in place as per Dwg D3391 & QSI 015. Adhere for 12 hours) A/R Sikaflex exp: <u>12-8-13</u> batch#: <u>M119399</u>								
150		0.00							
150	QC5- Inspect part completeness to step on W/O	0.00							
QC	Memo	0.00							
Quality Control									
160		0.00							
160	Skidtubes								
Skidtubes	Memo	0.00							
Skidtubes	1-Weld crossbolt spacer as per dwg D3391 & QSI 004 2-grind weld flush								

Handwritten signature and date 11-11-8

Handwritten: 1 0 86 11/11/09

Handwritten: 1 0 86 11/11/09
Handwritten: 1 0 SAA 11-11

Handwritten: A/R M118736

W/O:		WORK ORDER CHANGES					
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Hand Finishing AND REALODINE AS PER PAR09-043

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 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
190 *190* Powdercoat Powder Coating	White Gloss(Ref:4.3.5.1) per QSI005 4.3-Alum	0.00							
Memo START TIME: <u>8-10</u> OVEN TEMPERATURE: <u>320 °F</u> FINISH TIME: <u>8-40</u>									
200 *200* QC Quality Control	QC3- Inspect Part Finish	0.00							
Memo									

Handwritten signature

Handwritten signature

Handwritten: M118434

W/O:		WORK ORDER CHANGES					
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N900040100

Setup Start *NS1*

Stop *NS2*

Cust Item ID:

Customer:

Run Start *NR1*

Stop *NR2*

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

210	0.00
-----	------

Skidtubes

Skidtubes	Memo	0.00	
-----------	-------------	------	--

Skidtubes I- insert D3391-021 into D3391-23 /

Memo

1- insert D3391-021 into D3391-23

2- insert T-pins into first and third fwd saddle holes

3- ON FIRST SIDE ONLY drill out 2nd and forth fwd saddles holes to 0.500" as per DSI 9364

4- remove T-pins and locate DT9415 from first and third crossbolt hole using T-pins and clekos

5- ON 2ND SIDE ONLY ream out 2nd and forth saddle hole to 0.499". Remove DT9415

6- deburr, re-alodine and blow out chips

7- press fit D3591-1 spacers using DT9416 starting from 0.500" side

220	QC5- Inspect part completeness to step on W/O	0.00	/
-----	---	------	---

Memo

QC	Memo				
		0.00			

Quality Control

W/O:		WORK ORDER CHANGES					
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 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
230		0.00							
230	HandFinishing					1	62	11-11-14	
HandFinish	Memo	0.00							
Hand Finishing	Install Inserts as per Dwg								
240		0.00							
240	QC5- Inspect part completeness to step on W/O								
QC	Memo	0.00							
Quality Control									
250		0.00							
250	Identify as per dwg & Stock Location: _____								
Packaging	Memo	0.00							
Packaging	SHIP								

W/O:		WORK ORDER CHANGES					
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Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

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QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
260	QC21- Final Inspection - Work Order Release	0.00							
260									
QC	Memo	0.00							
Quality Control									

11/11/17
mf
11-11-16

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

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Picklist Print

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Page 1

Work Order ID: 75952

75952

Parent Item: D3391-023

D3391-023

Parent Item Name: Mid Tube Assembly

Start Date: 02/11/2011

Required Date: 16/11/2011

Start Qty: 1.00

Required Qty: 1.00

Comments: IPP A05.10.20 New Issue KJ/EC
 IPP B06.02.10 ECN 773 dwg rev.D EC
 IPP C 07.03.20 rev F dwg EC
 IPP D 07.03.28 re-format EC
 IPP E 07.10.31 ecn 1053P EC
 IPP Rev:F ECN 1056 07-11-13 DD verified by: EC
 IPP Rev:G 08-09-08 new process (ecn 08-510) DD verified by:EC
 IPP Rev:H 08-09-10 revH as per dwg DD verified by:EC
 IPP Rev: I 08-11-13 Removed steps per w/o, QC KJ verified by: ec IPP
 Rev:J add in seq 140 expire date & b# sikaflex DD 10.02.17 verified by:EC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
---------------------------------	------------------------	---------------	-------------	---------------------	------------------	-----------------	--------------------	----------------	-------------	--------------	---------------	----------------	--------

D2500-1-100

Manufactured

No

100

Each

65.0000

1

1

D2500-1-100

Skidtube Extrusion

**

Location

Loc Qty

Loc Code

HALL

65

50251

65

D3391-021

Manufactured

No

100

Each

0.0000

1

1

D3391-021

Fwd Tube Assembly

**

D3389-1

Manufactured

No

140

Each

0.0000

1

1

D3389-1

Web

D3681-1

Manufactured

No

160

Each

29.0000

5

5

D3681-1

Spacer

**

Location

Loc Qty

Loc Code

LG

29

68958

2

69893

2

71845

25

① DP 11-11-7

N/A

N/A DP 11-11-7

73433

① DP 11-11-8

86 11/11/09

5

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

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Picklist Print

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Parent Item: D3391-023

D3391-023

Parent Item Name: Mid Tube Assembly

Start Date: 02/11/2011

Required Date: 16/11/2011

Start Qty: 1.00

Required Qty: 1.00

D3591-1 Manufactured No

210

Each

37.0000

2

2

D3591-1

Bushing

Location

Loc Qty

Loc Code

ST068

37

57350

1

66147

8

71847

28

ALS4-1032-130

Purchased

No

230

Each

2,279.000

20

20

ALS4-1032-130

Insert

Location

Loc Qty

Loc Code

ST280

2000

119084

2000

ST281

279

117717

2

118237

12

118312

2

118386

263

* ALS-7-1032-130

119530.

20

BK 11-11-14.

4095-045.

76050.

1

BK 11-11-14.

AW3E-4A.

118706.

12

BK 11-11-14.

WHS 1149 C0332R.

118354.

12

BK 11-11-14.

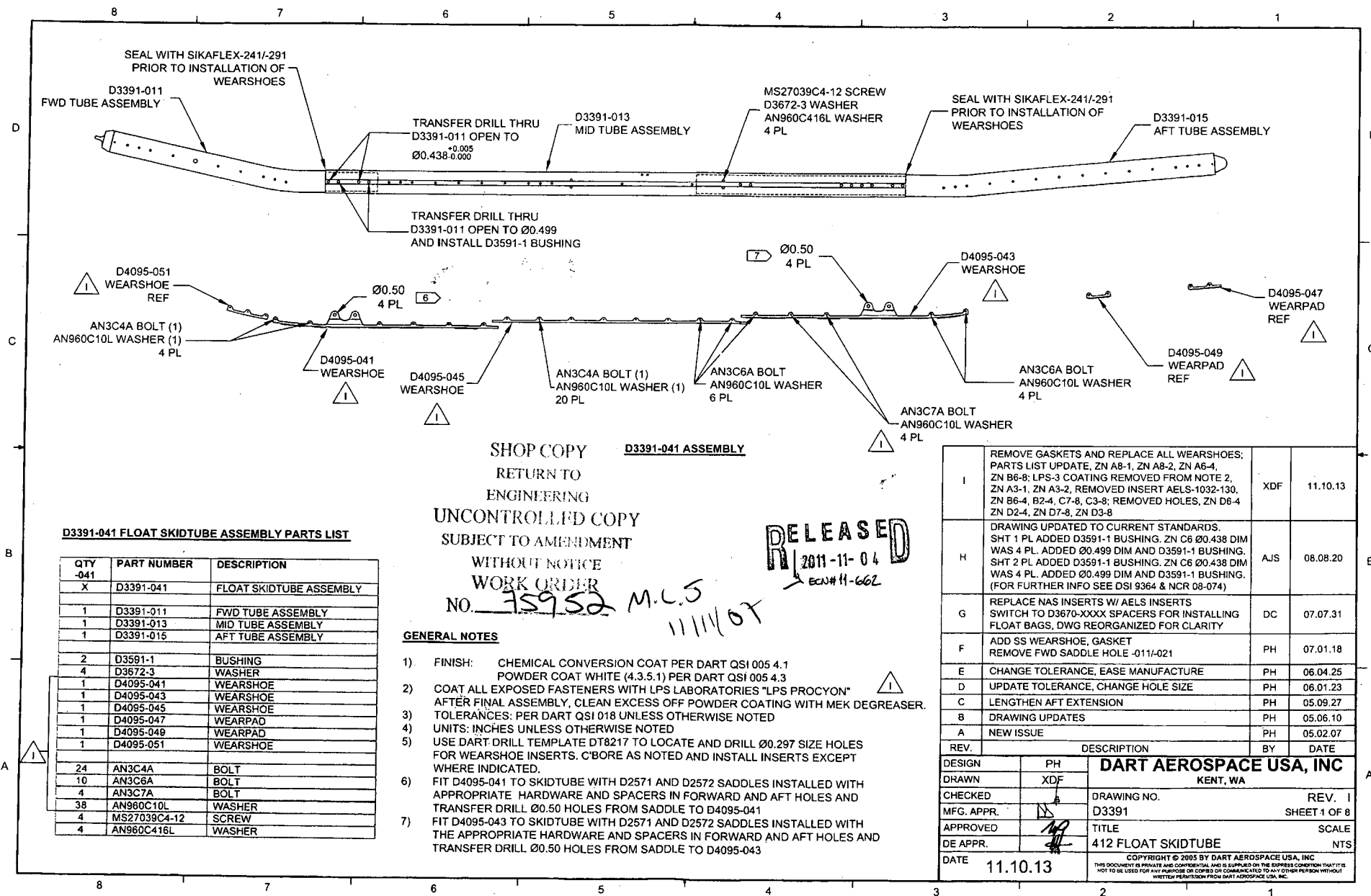
W/O:		WORK ORDER CHANGES					
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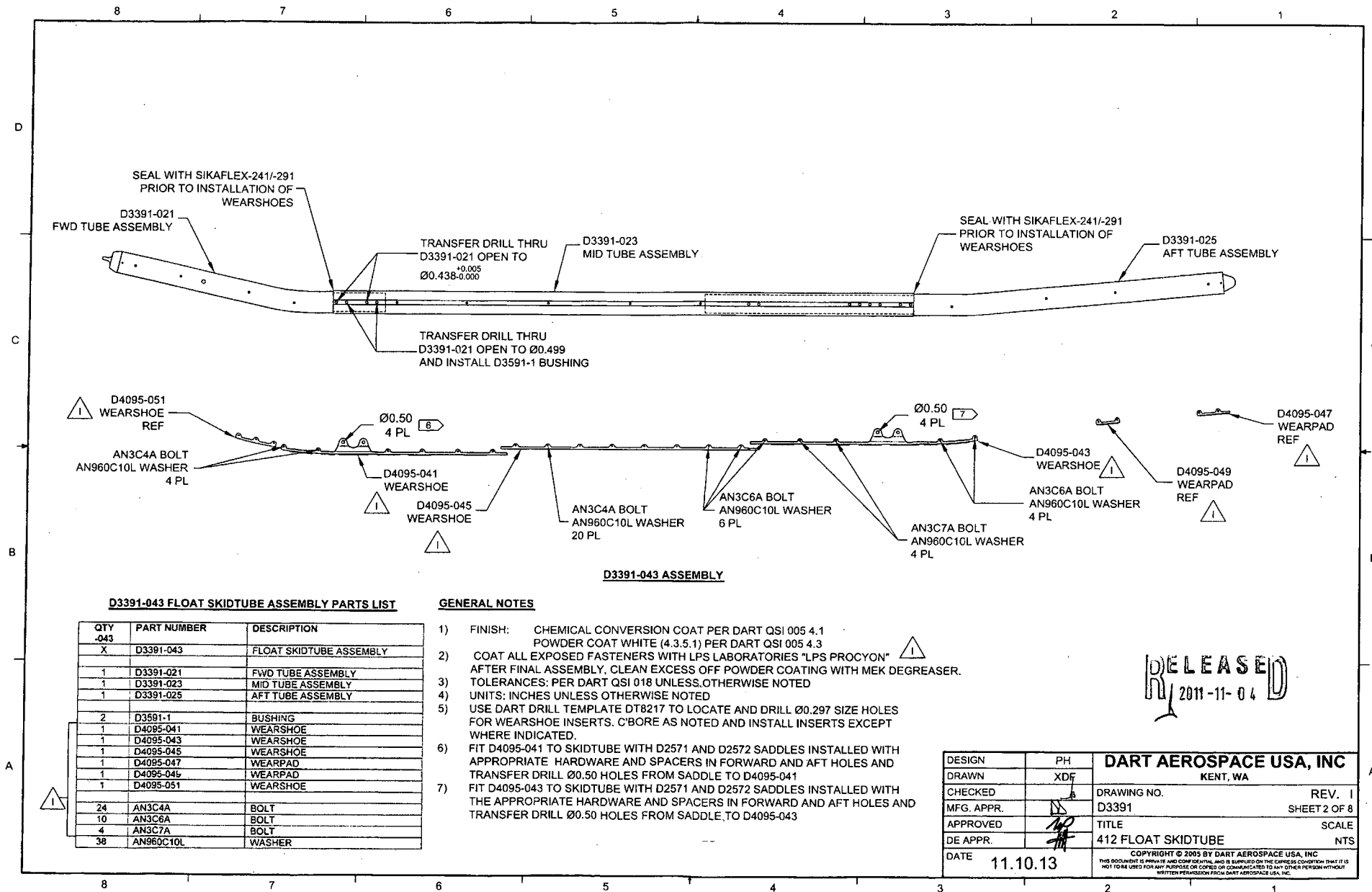
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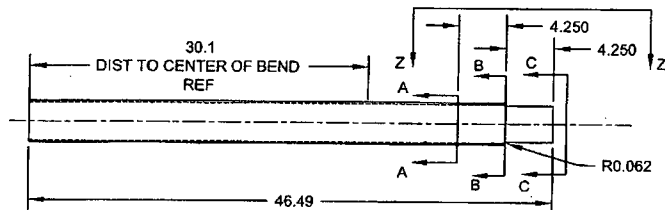
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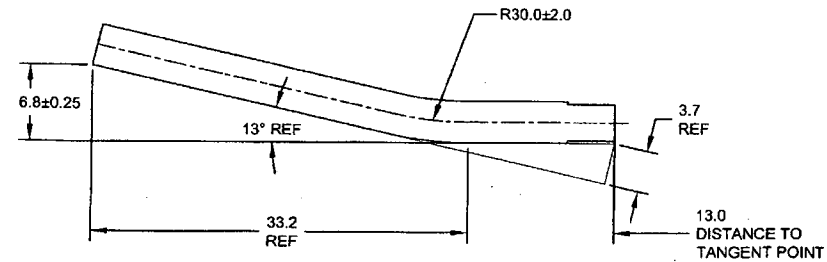
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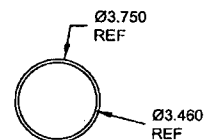
75952



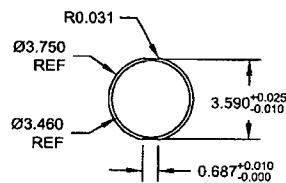
D3391-1 CUTTING DETAIL
(MAKE FROM D6013-047 SKIDTUBE MATERIAL)



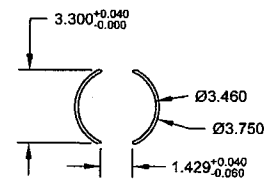
D3391-011/-021 BENDING DETAIL
(MAKE FROM D3391-1)



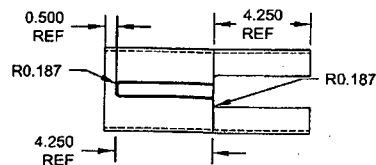
SECTION A-A
SCALE 2X



SECTION B-B
SCALE 2X



SECTION C-C
SCALE 2X



VIEW Z-Z
SCALE 2X

RELEASED
2011-11-04

DESIGN	PH	DART AEROSPACE USA, INC	
DRAWN	XDF	KENT, WA	
CHECKED		DRAWING NO.	REV. 1
MFG. APPR.		D3391	SHEET 3 OF 8
APPROVED		TITLE	SCALE
DE APPR.		412 FLOAT SKIDTUBE	NTS
DATE	11.10.13	COPYRIGHT © 2005 BY DART AEROSPACE USA, INC THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.	

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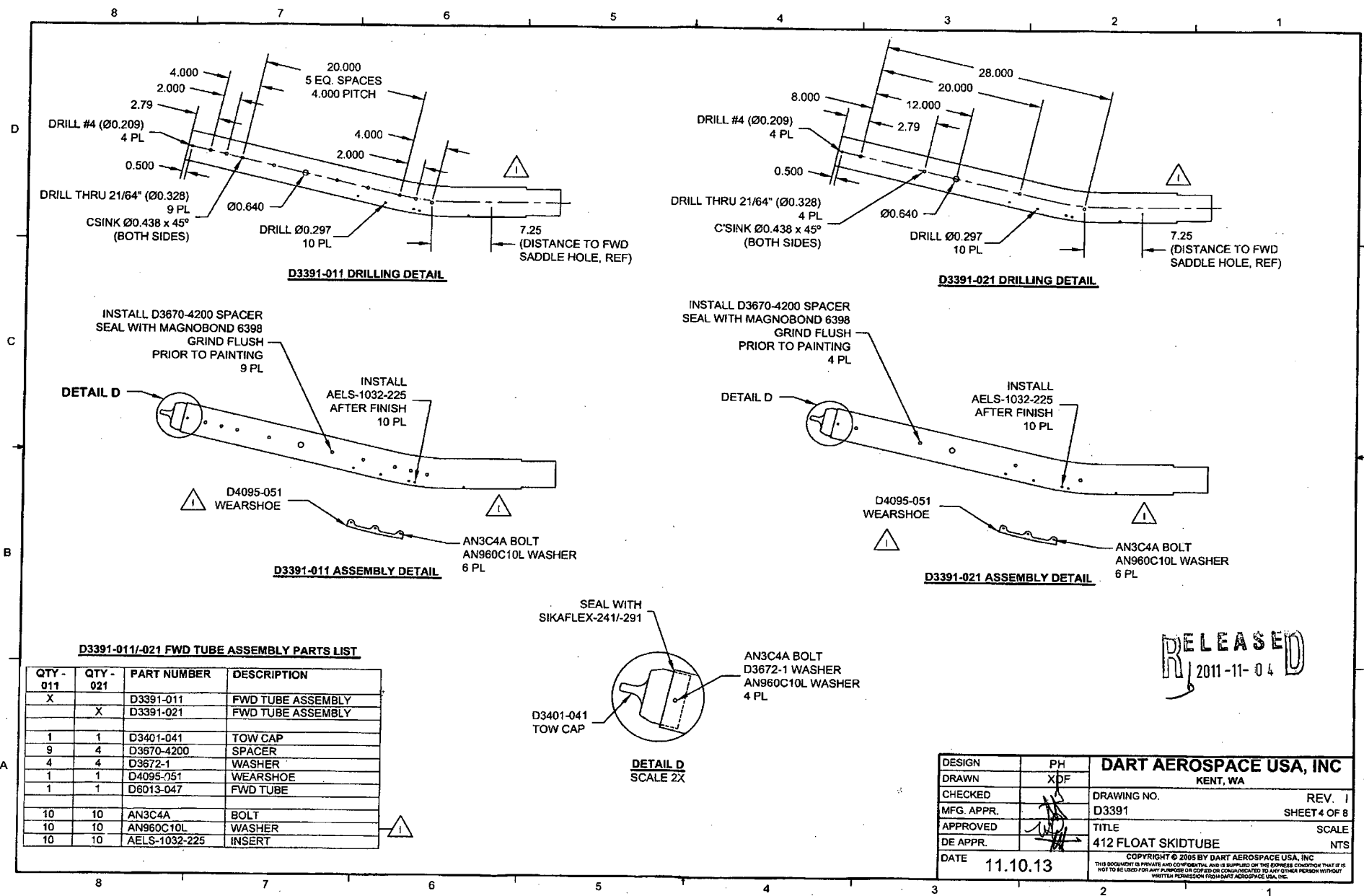
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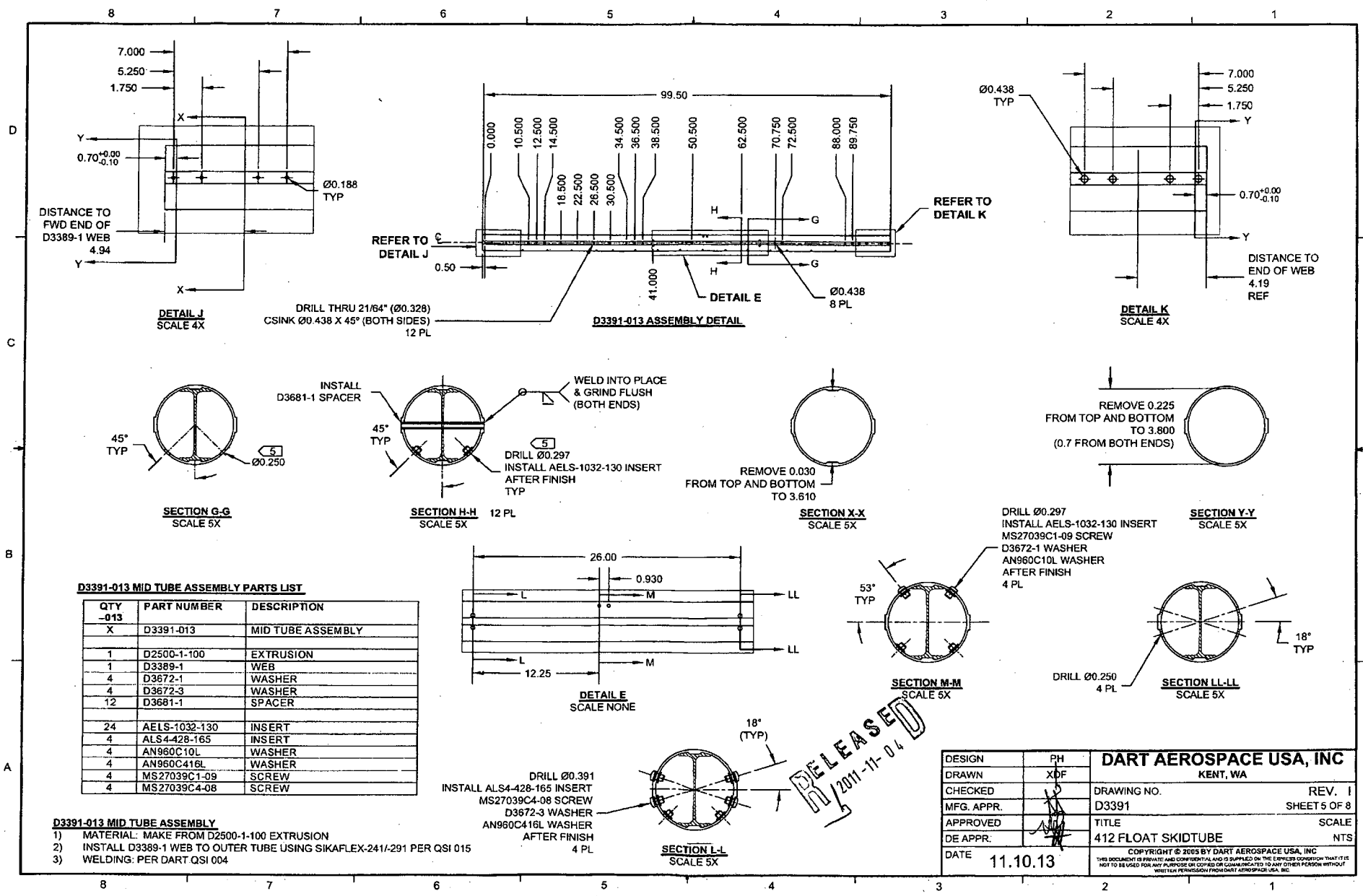
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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

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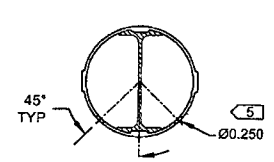
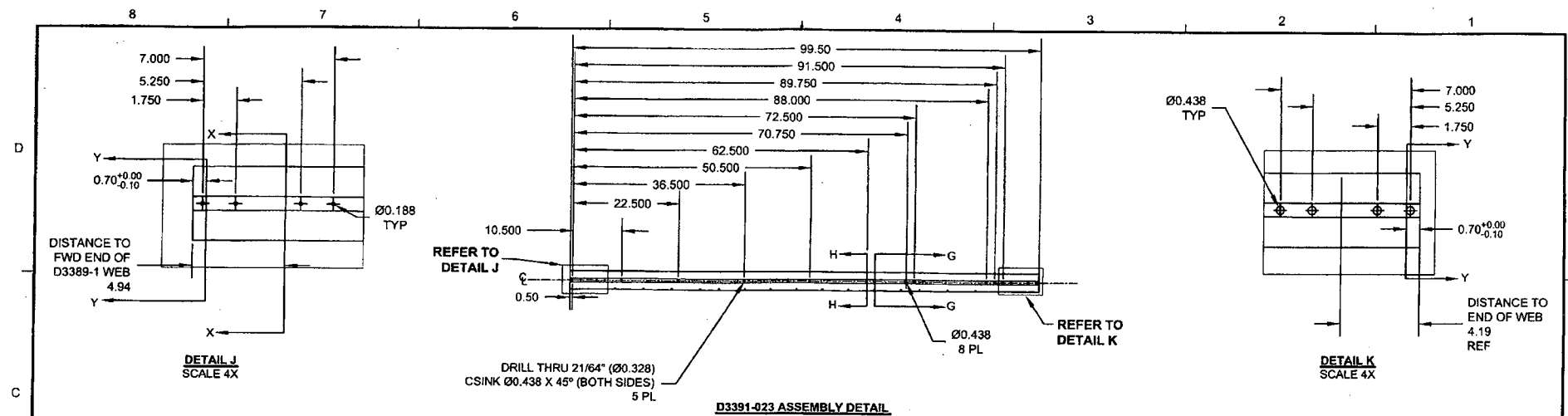
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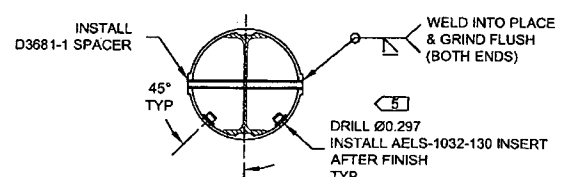
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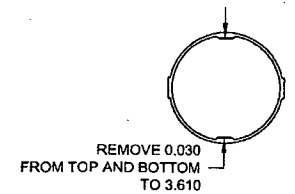
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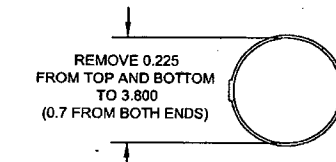
SECTION G-G
SCALE 5X



SECTION H-H
SCALE 5X



SECTION X-X
SCALE 5X



SECTION Y-Y
SCALE 5X

D3391-023 MID TUBE ASSEMBLY PARTS LIST

QTY - 023	PART NUMBER	DESCRIPTION
X	D3391-023	MID TUBE ASSEMBLY
1	D2500-1-100	EXTRUSION
1	D3389-1	WEB
5	D3681-1	SPACER
20	AELS-1032-130	INSERT

D3391-023 MID TUBE ASSEMBLY

- 1) MATERIAL: MAKE FROM D2500-1-100 EXTRUSION
- 2) INSTALL D3389-1 WEB TO OUTER TUBE USING SIKAFLEX-241/-291 PER QSI 015
- 3) WELDING: PER DART QSI 004

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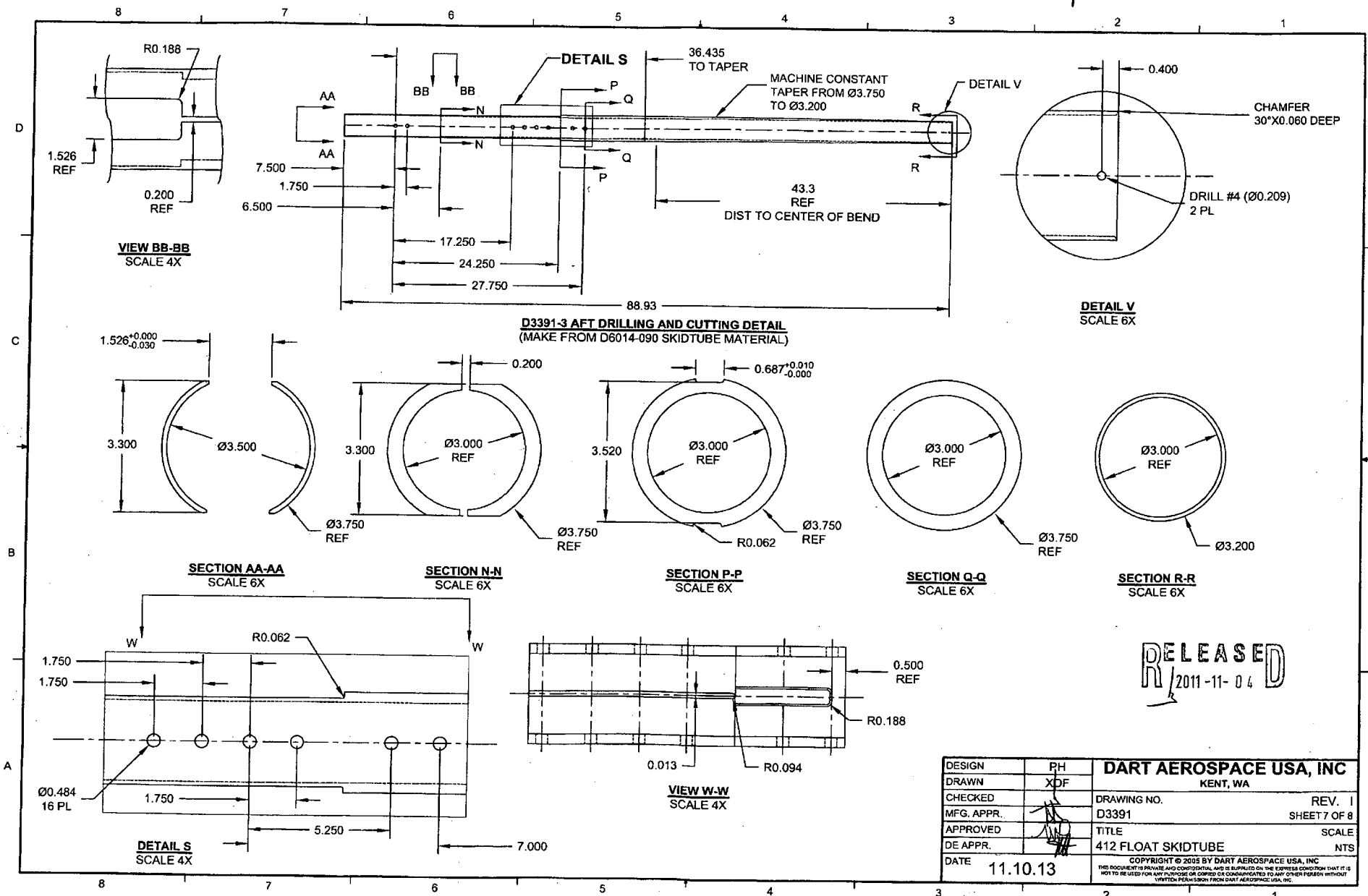
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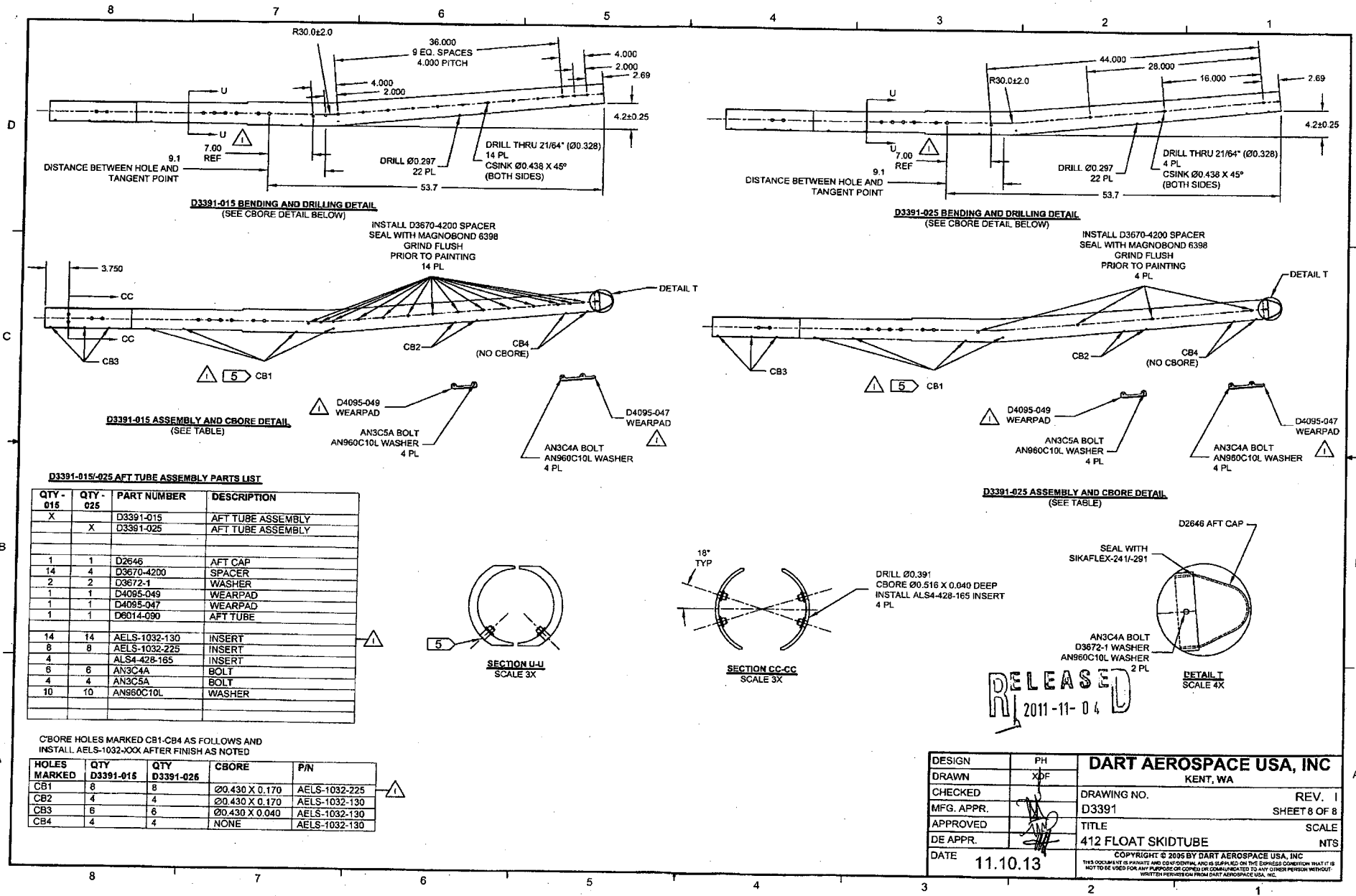
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D3391-015/-025 AFT TUBE ASSEMBLY PARTS LIST

QTY - 015	QTY - 025	PART NUMBER	DESCRIPTION
X	X	D3391-015	AFT TUBE ASSEMBLY
		D3391-025	AFT TUBE ASSEMBLY
1	1	D2646	AFT CAP
14	4	D3670-4200	SPACER
2	2	D3672-1	WASHER
1	1	D4095-049	WEARPAD
1	1	D4095-047	WEARPAD
1	1	D6014-090	AFT TUBE
14	14	AELS-1032-130	INSERT
6	6	AELS-1032-225	INSERT
4	4	ALS4-428-165	INSERT
6	6	AN3C4A	BOLT
4	4	AN3C5A	BOLT
10	10	AN960C10L	WASHER

C'BORE HOLES MARKED CB1-CB4 AS FOLLOWS AND INSTALL AELS-1032-XXX AFTER FINISH AS NOTED

HOLES MARKED	QTY D3391-015	QTY D3391-025	C'BORE	P/N
CB1	8	8	Ø0.430 X 0.170	AELS-1032-225
CB2	4	4	Ø0.430 X 0.170	AELS-1032-130
CB3	6	6	Ø0.430 X 0.040	AELS-1032-130
CB4	4	4	NONE	AELS-1032-130

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NO. 264

AWS D17.1.2001
QUALIFICATION TEST RECORD

Name: Barclay Elliott
Job number: 73035
Part number: 3391-023
Description: Mid Tube
Welding Process: Tig[☒] Mig[]
Base material: Aluminum
Current: AC[☒] DC[]

TEST REQUIREMENTS AND RESULTS

Visual: pass[☒] fail[]
Penetration: pass[☒] fail[]

UNACCEPTABLE

Cracks: pass[☒] fail[]
Undercut: pass[☒] fail[]
Pin holes: pass[☒] fail[]
Overlap (cold lap): pass[☒] fail[]
Porosity (surface): pass[☒] fail[]
Coloration: pass[☒] fail[]

Qualifier Sal Lewis Date of Test Coupon 11-08-31

Welder Barclay Elliott Date of Test Coupon 11-08-31

The above named individual is qualified in accordance with AWS D17.1.2001 to weld

Dart Aerospace Ltd

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